



Shri Shivaji Education Society, Amravati's
SCIENCE COLLEGE

Congress Nagar, Nagpur - 440 012 (M.S.) INDIA

'A+' Grade with 3.51 CGPA in 3rd Cycle

College with Potential for Excellence

Recognised Centre for Higher Learning & Research

Institutional Member of APQN

A Mentor College under UGC PARAMARSH Scheme

An ISO 21001:2018 Certified Institution

NIRF 2024 Rank-band : 201-300



E-mail: shivajiscience_ngp@yahoo.com Web : www.sscnagpur.ac.in



4th Cycle

Assessment & Accreditation by NAAC

CRITERION- I CURRICULAR ASPECTS

DVV-Metric No. :1.2.1-Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)



Shri Shivaji Education Society, Amravati's
SCIENCE COLLEGE

Congress Nagar, Nagpur- 440 012 (M.S.) INDIA

- Tel : +91-712 - 2423432 (O) • Telefax : +91-712 - 2440955
- E-mail : shivajiscience_ngp@yahoo.com
- Web : www.sscnagpur.ac.in

Shri Harshvardhan P. Deshmukh
President

Dr. Omraj S. Deshmukh
Principal

- 'A+' Grade with 3.51 CGPA (3rd Cycle) Reassessment College by NAAC, Bangalore
- A College with Potential for Excellence identified by UGC, New Delhi
- Member, APQN (Asia Pacific Quality Network)
- Recognized Centre for Higher Learning & Research
- Mentor College under 'Paramarsh Scheme' UGC, New Delhi
- An ISO 21001 : 2018 Certified Institution



**Dr. Panjabrao alias
Bhausaheb Deshmukh**
Founder President

No. Sc.

Date :

Self Declaration

This is to certify that, the information, reports, true copies of the supporting documents, numerical data, and weblinks furnished in this file are verified by IQAC and the head of the institution and found correct.

Dr. A. A. Halder
IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur

Dr. O. S. Deshmukh
Principal
S.S.E.S. Amravati's
Science College, Nagpur.



Metric No. :1.2.1-Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

2023-24	2022-23	2021-22	2020-21	2019-20	Total
24	11	0	0	10	45

DVV Finding:

HEI to provide approval letter for starting the value added course, Also HEI to provide circular, brochure, report, syllabus covered for the following value added course:

1-CRISPR-Cas-9 Genome Editing (2023-24)

2-Haematology (2023-24)

3-Artificial Intelligence-Search Methods for Problem solving (2023-24)

4-A Boot Camp to Special Theory to Relativity(2023-24)

5-Mushroom Cultivation-(2019-20)

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SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S
SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR

PG Department of Microbiology
Add on Course: CRISPR-Cas9 Genome Editing
Session 23-24

To,
The Principal
SSES Am's Science College,
Congress Nagar, Nagpur-12

Subject: For permission to conduct the add on courses in Microbiology and
Biotechnology department during the session 2023-2024

Respected Sir,

This is to request you that, the teachers of Microbiology and Biotechnology
department have prepared the syllabus and modules of the 30 hours certificate
courses for the session 2023-2024.

The details of the course module, syllabus and time table is submitted here
with.

Hence please permit to run the add on courses and oblige me.

Thanking you

Yours sincerely

Abhay C

HEAD

Department of Microbiology
Science College, Congress Nagar,
NAGPUR.

*Permitted
M. Shree*



SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S
SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR

PG Department of Microbiology

NOTICE

Date: 15/07/2023

All the students are informed that **P.G.Department of Microbiology** runs **Add on Course:CRISPR-Cas9 Genome Editing** for the session 2023-24. Interested students of are requested to register their names to the course Coordinator Dr. Pranita B. Gulhane on or before 27/07/2023.



Dr. Pranita B. Gulhane
Course- Coordinator
Add on Course

U.G. DEPARTMENT OF MICROBIOLOGY, SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR

Accredited with CGPA of 3.51 at 'A+' Grade by NAAC, Bangalore
A College with Potential for Excellence
An Institutional Member of APQN
Recognized Center for Higher Learning & Research
A Mentor College under Paramarsh Scheme of UGC, New Delhi
A Mentor College under Paris Sparsh Scheme of Maharashtra State

Add on Course for the Session 2023-24 on CRISPR-Cas9 Genome Editing

Course Introduction

This course provides a comprehensive overview of CRISPR-Cas9 technology, its mechanisms, and its applications in gene editing. It includes both theoretical knowledge and practical experience, equipping students with the skills needed for genome editing and molecular biology techniques.

Course Objectives

- Understand the fundamentals of CRISPR-Cas9 technology and its historical development.
- Learn the molecular mechanisms of CRISPR-Cas9 and its components.
- Explore the various applications of CRISPR-Cas9 in gene editing across different organisms.
- Gain hands-on experience in designing and executing CRISPR experiments, including data analysis and troubleshooting.

Registration Date: 29/03/2024

Prof. Atul Bobdey
Coordinator
Dept. of Microbiology

Prof. Mahendra Dhore
Principal
Science College, Nagpur

Dr. Pranita Gulhane
Course- Coordinator
Add on Course

SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S
SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR

PG Department of Microbiology
Add on Course: CRISPR Cas9 Genome Editing
Session 2023-24

Course Coordinator Report

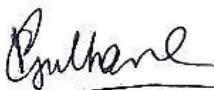
A free Add-On Course for PG students in the Department Microbiology, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur was held from 01st August 2023 to 17th August 2023. The course title was "CRISPR Cas9 Genome Editing". It is the complete beginner to Expert Course was perfect for anyone who wants to learn CRISPR Cas9 Genome Editing.

The CRISPR Cas9 Genome Editing course is designed to provide a comprehensive overview of CRISPR-Cas9 technology, its mechanisms, and its applications in gene editing. It includes both theoretical knowledge and practical experience, equipping students with the skills needed for genome editing and molecular biology techniques.

The course duration was 10 weeks (30 hours). Two theory classes were engaged on Friday & Saturday and one Practical was engaged in every week. The structure of marking system was 50 marks on theory paper and 40 marks on practical examination including 10 marks for internal. The question paper of theory examination was in MCQ type of 25 questions with four multiple choices. Practical examination was also taken on this course for 40 marks. Internal marks assessment was on the basis of regularity, attendance, assignment submission etc. All the 30 students were present in both theory and practical examination. The result was prepared and certificates were also distributed to the students.

Action Taken: Students gain a thorough understanding of the CRISPR-Cas9 system, including its natural role in bacterial immunity and its adaptation for genome editing in various organisms. Knowledge of the components of the CRISPR-Cas9 system, including guide RNA (gRNA), Cas9 nuclease, and the process of target DNA recognition and cleavage.




Dr. Pranita Gulhane
Course- Coordinator
Add on Course

PG Department of Microbiology

Add on Course: Syllabus for CRISPR-Cas9 Genome Editing

(Session 2023-24)

Course Co-ordinator: Dr. Pranita B. Gulhane

Course Introduction

This course provides a comprehensive overview of CRISPR-Cas9 technology, its mechanisms, and its applications in gene editing. It includes both theoretical knowledge and practical experience, equipping students with the skills needed for genome editing and molecular biology techniques.

Course Objectives

- Understand the fundamentals of CRISPR-Cas9 technology and its historical development.
- Learn the molecular mechanisms of CRISPR-Cas9 and its components.
- Explore the various applications of CRISPR-Cas9 in gene editing across different organisms.
- Gain hands-on experience in designing and executing CRISPR experiments, including data analysis and troubleshooting.

Instructional Strategies: Theory class, Practical, Video clips, Models etc.

Evaluation Strategies: Oral discussions and Final MCQ examination

Course Outcomes

Upon completing this course, students will be able to:

- Describe the principles and components of the CRISPR-Cas9 system.
- Design CRISPR-Cas9 constructs for specific gene targets.
- Perform CRISPR-Cas9 mediated gene editing experiments.
- Analyze and interpret the results of CRISPR-Cas9 experiments.
- Discuss the ethical and societal implications of genome editing technology.

Duration of course: Ten weeks (30 Hours)



Pranita B. Gulhane
Dr. Pranita B. Gulhane
Course- Coordinator
Add on Course

PG Department of Microbiology
Add on Course: Syllabus for CRISPR-Cas9 Genome Editing
(Session 2023-24)

Module: The Structure of Syllabus and system of evaluation

Course	Theory Papers and Practical	Total Marks		
		Theory	Internal	Practical
Certificate Course in CRISPR-Cas9 technology	Theory paper- CRISPR-Cas9 technology * Theory examination will be of MCQ pattern having 25 questions each with equal marks.	50	10	40
	* Practical examination will be based on performance evaluation in the laboratory and hands-on-training	100		

Gulhane

Dr. Pranita Gulhane

Add on Course Coordinator

Amitabh Halder

Dr. Amitabh Halder

IQAC Coordinator

Internal Quality Assurance Cell
(IQAC)

S. S. E. S. A. Science College
Congress Nagar, Nagpur.

Mahendra Dhore

Prof. Mahendra Dhore

Principal

Principal

S. S. E. S. Amravati's
Science College, Nagpur.



PG Department of Microbiology
Syllabus of Add on Course: Syllabus for CRISPR-Cas9 Genome Editing
(Session 2023-24)

Course Units

Unit 1: Introduction to CRISPR-Cas9

- **History and Discovery of CRISPR-Cas Systems**
- **Mechanisms of CRISPR-Cas9**
- Structure and function of Cas9
- Guide RNA (gRNA) design
- **Types of CRISPR Systems**
- Class 1 and Class 2 CRISPR systems
- Applications and differences

Unit 2: Designing CRISPR-Cas9 Experiments

- **Target Selection**
- Criteria for selecting target sites
- Off-target effects and their minimization
- **gRNA Design and Synthesis**
- Tools and software for gRNA design
- Synthesis and validation of gRNAs
- **CRISPR Vectors and Delivery Methods**
- Plasmid vectors, viral vectors, and ribonucleoprotein complexes
- Methods of delivery (transfection, electroporation, etc.)

Unit 3: Applications of CRISPR-Cas9

- **Gene Knockout and Gene Knock-in**
- Techniques for generating knockouts and knock-ins
- Applications in model organisms and cell lines
- **CRISPR in Disease Models and Therapeutics**
- CRISPR for disease research
- Therapeutic applications and clinical trials
- **CRISPR Beyond Gene Editing**
- CRISPRa and CRISPRi for gene regulation
- Base editing and prime editing

Unit 4: Data Analysis and Ethical Considerations

- **Data Analysis and Validation**
- Methods for detecting and analyzing CRISPR edits
- Sequencing and bioinformatics tools
- **Troubleshooting CRISPR Experiments**
- Common issues and solutions
- **Ethical, Legal, and Social Implications**
- Ethical considerations in genome editing
- Regulatory landscape and public perception

Practical Sessions

Practical 1: Designing gRNAs

- Use of bioinformatics tools to design gRNAs for a given target gene.
- Synthesis and validation of gRNAs.

Practical 2: Cloning and Delivery of CRISPR-Cas9 Constructs

- Cloning gRNA into CRISPR vectors.
- Transfection of CRISPR constructs into cells.

Practical 3: Gene Editing and Screening

- Performing CRISPR-Cas9 mediated gene editing.
- Screening and validating edited cells using PCR and sequencing.

Practical 4: Data Analysis and Troubleshooting

- Analyzing sequencing data to confirm gene edits.
- Troubleshooting common issues in CRISPR experiments.



Pranita B. Gulhane

Dr. Pranita B. Gulhane
Course- Coordinator
Add on Course

SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S
SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR

PG Department of Microbiology
Add on Course: CRISPR-Cas9 Genome Editing
Session 23-24

To,
The Principal
SSES Am's Science College,
Congress Nagar, Nagpur-47

Subject: For permission to conduct the add on courses in Microbiology and
Biotechnology department during the session 2023-2024

Respected Sir,

This is to request you that the teachers of Microbiology and Biotechnology
department have prepared the syllabus and modules of the 30 hours certificate
courses for the session 2023-2024.

The details of the course module, syllabus and time table is submitted here
with.

Hence please permit to run the add on courses and oblige me.

Thanking you

Yours sincerely

Chakraborty

22/07/23
Department of Microbiology
Science College, Congress Nagar,
Nagpur



Permitted
A. B. L. K. S.

SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S
SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR


PG Department of Microbiology

NOTICE

Date: 11/03/2024

All the students are informed that **P.G. Department of Microbiology** runs **Add on Course: CRISPR-Cas9 Genome Editing** for the session 2023-24. Interested students of M.Sc. are requested to register their names to the course Coordinator Dr. Pranita B. Gulhane on or before 29/03/2024.




Dr. Pranita B. Gulhane
Course- Coordinator
Add on Course



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Add on Course for the Session 2023-24 on CRISPR-Cas9 Genome Editing

Course Introduction

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Course Objectives

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Registration Date: 27/07/2023

Prof. Atul Bobdey
Coordinator

Prof. Mahendra Dhore
Principal

Dr. Pranita Gulhane
Course- Coordinator

**SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S
SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR
PG Department of Microbiology
Add on Course: CRISPR Cas9 Genome Editing
Session 2023-24**

Course Coordinator Report

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Dr. Pranita Gulhane
Add on Course Coordinator



PG Department of Microbiology

Add on Course: Syllabus for CRISPR-Cas9 Genome Editing

(Session 2023-24)

Course Co-ordinator: Dr. Pranita B. Gulhane

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Pranita B. Gulhane
Dr. Pranita B. Gulhane
Course- Coordinator
Add on Course

PG Department of Microbiology
Add on Course: Syllabus for CRISPR-Cas9 Genome Editing
(Session 2023-24)

Module: The Structure of Syllabus and system of evaluation

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Pranita Gulhane

Dr. Pranita Gulhane
Add on Course Coordinator



Amitabh Halder

Dr. Amitabh Halder
IQAC Coordinator
Internal Quality Assurance Cell
(IQAC)
S. S. E. S. A. Science College
Congress Nagar, Nagpur.

Mahendra Dhore

Prof. Mahendra Dhore
Principal
Principal
S. S. E. S. Amravati's
Science College, Nagpur.

PG Department of Microbiology
Syllabus of Add on Course: Syllabus for CRISPR-Cas9 Genome Editing
(Session 2023-24)

Course Units

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- Analyzing sequencing data to confirm gene edits.
- Troubleshooting common issues in CRISPR experiments.



Pranita B. Gulhane
Dr. Pranita B. Gulhane
Course- Coordinator
Add on Course

To,
The Principal
SSES Amt's Science College,
Congress Nagar, Nagpur-12

Subject: For permission to conduct the add on courses in Zoology department during the session 2023-2024

Respected Sir,

This is to request you that, the teachers of Zoology department have prepared the syllabus and modules of the 30 hours certificate courses for the session 2023-2024.


The details of the course module, syllabus and time table is submitted here with.

Hence please permit to run the add on courses and oblige me.

Thanking you

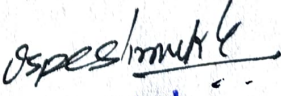
Yours sincerely

17/06/2023


Dr. A. D. Bobdey
Professor & Head
Department of Zoology,
Shri Shivaji Science College,
Congress Nagar, Nagpur-12.


IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur

Permitted
MSHORE


Principal
S.S.E.S. Amravati's
Science College, Nagpur.

Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

**CERTIFICATE COURSE IN "ADVANCED HAEMATOLOGY:
DAIGNOSIS AND MANAGEMENT"
REGISTRATION OPEN**

Date: 20/07/2023

All students of B.Sc. I, II, III are informed that the Department of Zoology, Shri Shivaji Science College, Nagpur is pleased to announce the opening of registrations for the **Certificate Course in Advanced Haematology: It's Diagnosis and Management**. This course is designed to provide students with advanced knowledge and practical skills in Haematology.

Only 80 seats are available for the course, admission will be done on first come first admit basis.

Interested student can give their names to the course coordinator before 25/07/23.

Course coordinator: Dr. R. A. Patil Bhagat

R. Patil

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

[Signature]
IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur

[Signature]
Principal
S. S. E. S. Amravati's
Science College, Nagpur.

Shri Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

Date: 25/07/2023

All the students of B.Sc. I, II, III are hereby informed that classes of Certificate Course In Advanced Haematology: Diagnosis And Management will start from 01 August 2023 to 07 October 2023. All are informed to attend the lecture.

Time Table

Day	Theory
Friday	RPB (B13) Theory 4.00 PM – 5.00 PM
Saturday	SVG (B13) Theory, 4.00 PM – 5.00 PM
	RPB (ZL) practical, 5.00 PM – 6.00 PM

Rupali

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

[Signature]
IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur

[Signature]
Principal
S.S.E.S. Amravati's
Science College, Nagpur.

Shri Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

CERTIFICATE COURSE EXAMINATION SCHEDULE

Date: 16/10/2023

All the students of B.Sc. I, II, III enrolled in the **Certificate Course in Advanced Haematology: Diagnosis And Management**, This is to inform you that the examination for the certificate course will be held as per the following schedule:

- **Exam Date:** 30 October 2023
- **Time:** 10:00 am to 10:45 am
- **Venue:** Shri Shivaji Science College, Nagpur

All the students have to reached 15 min before the exam time.

Rupali

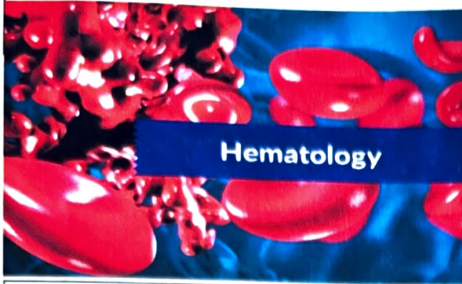
Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

[Signature]
IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur

[Signature]
Principal
S. S. E. S. Amravati's
Science College, Nagpur.

CERTIFICATE COURSE IN ADVANCED HEMATOLOGY: DIAGNOSIS AND MANAGEMENT



**Free Certificate course for
College Students**

Duration – 30 Hours (10 Weeks)

**Process of Registration- Early
birds will be admitted**

Course Objectives:

1. To understand the scope and importance of hematology.
2. To learn the function of normal cellular components and the formation of blood.
3. To differentiate between various hematological disorders and their management.
4. To gain hands-on experience with hematology laboratory equipment and procedures.
5. Let the students understand the human blood and its disorders based on an up-to-date knowledge and in a simple stylish way.
6. Familiarize students with the pathophysiological background of main blood disorders.


Hematology is a fascinating and vital field of medicine that focuses on the study of blood, blood-forming organs, and blood diseases. It is the branch of medicine concerned with the study of the cause, prognosis, treatment, and prevention of diseases related to blood. It covers a wide range of disorders including but not limited to hemophilia, leukemia, lymphoma, and sickle-cell anemia. Hematology is usually a part of the curriculum where students learn the basics of blood diseases and their treatments. The field of hematology offers a wide range of career opportunities. This course offers an exciting career path, impactful research opportunities, It's a field with immense potential for growth and fulfillment.

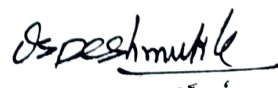


**Department of Zoology
SSES Amrati's Science College, Congress
Nagar, Nagpur**

Last Date for Registration: 25/07/2023

For Registration Contact: Dr. R.A. Patil Bhagat (Coordinator)


ICAC Coordinator
S.S.E.S.A's
Science College, Nagpur


Principal
S. S. E. S. Amravati's
Science College, Nagpur.

Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

Report On Certificate Course In "Advanced Hematology: Diagnosis and Management"

Department Of Zoology, Shri Shivaji Science College, Nagpur conducted certificate course on Advanced Hematology: Diagnosis and Management. Hematology is a fascinating and vital field of medicine that focuses on the study of blood, blood-forming organs, and blood diseases. It is the branch of medicine concerned with the study of the cause, prognosis, treatment, and prevention of diseases related to blood. It covers a wide range of disorders including but not limited to **hemophilia, leukemia, lymphoma, and sickle-cell anemia**. Hematology is usually a part of the curriculum where students learn the basics of blood diseases and their treatments. The field of hematology offers a wide range of career opportunities. The **Certificate Course in Hematology** was designed to provide students with a solid foundation in hematology, equipping them with essential knowledge and practical skills. This course aimed to enhance their understanding of blood disorders, laboratory techniques, and diagnostic methods.

Certificate course on Advanced Hematology: Diagnosis and Management was undertaken by the students of B.Sc. I, II and III of CZM group, as a part of additional academic curriculum under the guidance of Dr. R. A. Patil Bhagat with view to provide complete knowledge on hematology. 81 students participated in the ten week (30 hours) certificate course in Advanced Hematology : Diagnosis And Management. The **Certificate Course in Hematology** empowered students to excel in clinical practice, research, and diagnostics.

ACTION TAKEN: this course equips participants with the knowledge and skills necessary for excellence in the field of hematology. By completing this certificate program, individuals can make meaningful contributions to patient health and well-being.

R. A. Patil

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

R. A. Patil
ICAC Coordinator
S. S. E. S.
Science College, Nagpur

S. S. E. S.

Principal
S. S. E. S. Amravati's
Science College, Nagpur.

SYLLABUS

Certificate course (10 weeks)
(Advanced Hematology: Diagnosis and Management)

Theory-

UNIT- I Introduction to Hematology

- Scope and importance of haematology.
- Equipment and chemicals used in a haematology laboratory.
- Morphology of normal and abnormal blood cells.
- Haematological disorders and their association with cell morphology.

UNIT – II Hematological Testing and Procedures

- Blood collection and preservation methods.

Practical-

- a) Blood sampling techniques and specimen acceptability
- b) Red blood cell count and White blood cell count
- c) Estimation of hemoglobin concentration
- d) Preparation of blood Smear, Platelet smear, Clotting and bleeding time
- e) Case studies and practical sessions on hematological analysis.

Distribution of marks: -

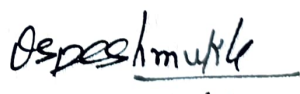
- | | |
|---|----|
| 1. Blood sampling techniques- | 05 |
| 2. Red blood cell count and White blood cell count- | 05 |
| 3. Estimation of hemoglobin - | 05 |
| 4. Case studies - | 05 |

- Preparation and staining of peripheral blood films.
- Haemoglobin estimation methods.
- Complete Blood Cell Count: RBC, WBC, Platelet count, and indices.

UNIT – III Hematological Disorders

- Anaemia and polycythaemia: Types, causes, and management.
- Leukopenia and leucocytosis: Diagnosis and treatment.
- Thrombocytopenia and thrombocytosis: Clinical significance and management.
- Elevated ESR and its implications.


IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur


Principal
S. S. E. S. Amravati's
Science College, Nagpur.

Week-wise teaching plan:

Week	Hrs.	Syllabus
Week 1	1	Introduction to Hematology
	1	Scope and importance of haematology.
	1	Equipment and chemicals used in a haematology laboratory
Week 2	1	Equipment and chemicals used in a haematology laboratory
	2	Blood sampling techniques and specimen acceptability (Practical)
Week 3	1	Hematological disorders
	2	Blood collection and preservation methods.
Week 4	1	Preparation and staining of peripheral blood films.
	1	Hemoglobin estimation methods
Week 5	2	Complete Blood Cell Count: RBC, WBC, Platelet count, and indices.
	1	Anemia: Types, causes, and management.
Week 6	2	RBC and WBC Count (Practical)
	1	polycythemia: Types, causes, and management.
Week 7	2	Leukopenia and leukocytosis: Diagnosis and treatment
	1	Estimation of haemoglobin
Week 8	2	Preparation of blood Smear, Platelet smear, Clotting and bleeding time(practical)
	1	Estimation of haemoglobin (practical)
Week 9	2	Case studies (Practical)
	1	Thrombocytopenia Clinical significance and management
Week 10	1	Thrombocytosis: Clinical significance and management.
	2	Elevated ESR and its implications.

[Signature]
 Coordinator
 S. S. E. S. Amravati's
 Science College, Nagpur

[Signature]
 Principal
 S. S. E. S. Amravati's
 Science College, Nagpur.

To,
The Principal
Shri Shivaji Science College,
Nagpur

Subject: Permission to Conduct Certificate Course in Advanced Haematology: Diagnosis and Management.

Respected sir,

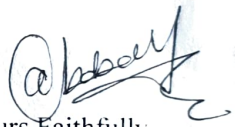
This is to request you that Certificate Course in Advanced Haematology: Diagnosis and Management has been organised as a part of UG/PG Curriculum. As the course coordinator, I assure you that this program will enhance the skills and knowledge of our students. It covers essential topics related to haematology, and successful completion will result in a valuable certificate.

I kindly request your permission to proceed with organizing this course. We have already prepared the course content, and experienced faculty members are willing to conduct the sessions. So please grant us permission to conduct the course.

Please do the Needful and Oblige.


Thanking you

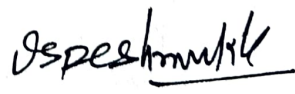
Date:- 10/01/2024
Place:- Nagpur


Yours Faithfully

Dr. A. D. Bobdey
Professor & head
Department of Zoology,
Shri Shivaji Science College,
Congress Nagar, Nagpur-12.

Permitted
Nagpur


IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur


Principal
S. S. E. S. Amravati's
Science College, Nagpur.

Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

**CERTIFICATE COURSE IN "ADVANCED HAEMATOLOGY:
DAIGNOSIS AND MANAGEMENT"
REGISTRATION OPEN**

Date: 10/01/2024

All students of B.Sc. I, II, III are informed that the Department of Zoology, Shri Shivaji Science College, Nagpur is pleased to announce the opening of registrations for the **Certificate Course in Advanced Haematology: It's Diagnosis and Management**. This course is designed to provide students with advanced knowledge and practical skills in Haematology.

Only 50 seats are available for the course, admission will be done on first come first admit basis.

Interested student can give their names to the course coordinator before 20/01/24.

Course coordinator: Dr. R. A. Patil Bhagat

Rupali

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

Rupali
IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur

S. S. E. S. Amravati's
Principal
S. S. E. S. Amravati's
Science College, Nagpur

Shri Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

Date: 20/01/2024

All the students of B.Sc. I, II, III are hereby informed that classes of Certificate Course in Advanced Hematology: Diagnosis and Management will start from 01 February 2024 to 07 April 2024. All are informed to attend the lecture.

Time Table

Day	Theory
Friday	RPB (B13) Theory 4.00 PM – 5.00 PM
Saturday	SVG (B13) Theory, 4.00 PM – 5.00 PM
	KIS (ZL) practical, 5.00 PM – 6.00 PM

Rupali

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

[Signature]
IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur

[Signature]
Principal
S.S.E.S. Amravati's
Science College, Nagpur

Shri Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

CERTIFICATE COURSE EXAMINATION SCHEDULE

Date: 15/10/2024

All the students of B.Sc. I, II, III enrolled in the **Certificate Course in Advanced Haematology: Diagnosis And Management**, This is to inform you that the examination for the certificate course will be held as per the following schedule:

- **Exam Date:** 27 April 2024
- **Time:** 10:00 am to 10:45 am
- **Venue:** Shri Shivaji Science College, Nagpur

All the students have to reached 15 min before the exam time.

R. A. Patil

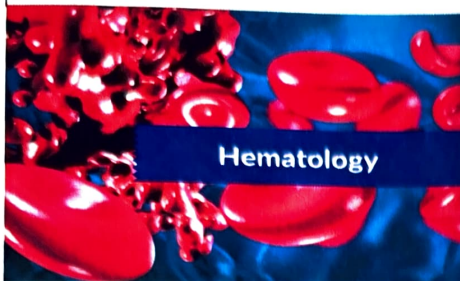
Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

S. S. E. S. Amravati's

Principal
S. S. E. S. Amravati's
Science College, Nagpur

CERTIFICATE COURSE IN ADVANCED HEMATOLOGY: DIAGNOSIS AND MANAGEMENT



**Free Certificate course for
College Students**

Duration – 30 Hours (10 Weeks)

**Process of Registration- Early
birds will be admitted**

Course Objectives:

1. To understand the scope and importance of hematology.
2. To learn the function of normal cellular components and the formation of blood.
3. To differentiate between various hematological disorders and their management.
4. To gain hands-on experience with hematology laboratory equipment and procedures.
5. Let the students understand the human blood and its disorders based on an up-to-date knowledge and in a simple stylish way.
6. Familiarize students with the pathophysiological background of main blood disorders.


Hematology is a fascinating and vital field of medicine that focuses on the study of blood, blood-forming organs, and blood diseases. It is the branch of medicine concerned with the study of the cause, prognosis, treatment, and prevention of diseases related to blood. It covers a wide range of disorders including but not limited to hemophilia, leukemia, lymphoma, and sickle-cell anemia. Hematology is usually a part of the curriculum where students learn the basics of blood diseases and their treatments. The field of hematology offers a wide range of career opportunities. This course offers an exciting career path, impactful research opportunities. It's a field with immense potential for growth and fulfillment.

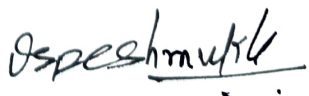


**Department of Zoology
SSES Amt's Science College, Congress
Nagar, Nagpur**

Last Date for Registration: 20/01/2024

For Registration Contact: Dr. R.A. Patil Bhagat (Coordinator)


**IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur**


**Principal
S. S. E. S. Amravati's
Science College, Nag.**

**Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24**

Report On Certificate Course In "Advanced Hematology: Diagnosis and Management"

Department Of Zoology, Shri Shivaji Science College, Nagpur conducted certificate course on Advanced Hematology: Diagnosis and Management. Hematology is a fascinating and vital field of medicine that focuses on the study of blood, blood-forming organs, and blood diseases. It is the branch of medicine concerned with the study of the cause, prognosis, treatment, and prevention of diseases related to blood. It covers a wide range of disorders including but not limited to hemophilia, leukemia, lymphoma, and sickle-cell anemia. Hematology is usually a part of the curriculum where students learn the basics of blood diseases and their treatments. The field of hematology offers a wide range of career opportunities. The **Certificate Course in Hematology** was designed to provide students with a solid foundation in hematology, equipping them with essential knowledge and practical skills. This course aimed to enhance their understanding of blood disorders, laboratory techniques, and diagnostic methods.

Certificate course on Advanced Hematology: Diagnosis and Management was undertaken by the students of B.Sc. I, II and III of CBZ group, as a part of additional academic curriculum under the guidance of Dr. R. A. Patil Bhagat with view to provide complete knowledge on hematology. 50 students participated in the ten week (30 hours) certificate course in Advanced Hematology : Diagnosis And Management. The **Certificate Course in Hematology** empowered students to excel in clinical practice, research, and diagnostics.

ACTION TAKEN: this course equips participants with the knowledge and skills necessary for excellence in the field of hematology. By completing this certificate program, individuals can make meaningful contributions to patient health and well-being.

Rupali

Dr. R. A. Patil Bhagat
Coordinator
Advanced Haematology: It's Diagnosis and Management,
Department of Zoology

[Signature]
IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur

[Signature]
Principal
S. S. E. S. Amravati's
Science College, Nagpur

SYLLABUS

Certificate course (10 weeks)
(Advanced Hematology: Diagnosis and Management)

Theory-

UNIT- I Introduction to Hematology

- Scope and importance of haematology.
- Equipment and chemicals used in a haematology laboratory.
- Morphology of normal and abnormal blood cells.
- Haematological disorders and their association with cell morphology.

UNIT – II Hematological Testing and Procedures

- Blood collection and preservation methods.

Practical-

- a) Blood sampling techniques and specimen acceptability
- b) Red blood cell count and White blood cell count
- c) Estimation of hemoglobin concentration
- d) Preparation of blood Smear, Platelet smear, Clotting and bleeding time
- e) Case studies and practical sessions on hematological analysis.


Distribution of marks: -


- | | |
|---|----|
| 1. Blood sampling techniques- | 05 |
| 2. Red blood cell count and White blood cell count- | 05 |
| 3. Estimation of hemoglobin - | 05 |
| 4. Case studies - | 05 |

- Preparation and staining of peripheral blood films.
- Haemoglobin estimation methods.
- Complete Blood Cell Count: RBC, WBC, Platelet count, and indices.

UNIT – III Hematological Disorders

- Anaemia and polycythaemia: Types, causes, and management.
- Leukopenia and leucocytosis: Diagnosis and treatment.
- Thrombocytopenia and thrombocytosis: Clinical significance and management.
- Elevated ESR and its implications.


IQAC Coordinator
S.S.E.S.A's
Science College, Nagpur


Principal
S. S. E. S. Amravati's
Science College, Nagpur

Week-wise teaching plan:

Week	Hrs.	Syllabus
Week 1	1	Introduction to Hematology
	1	Scope and importance of haematology.
	1	Equipment and chemicals used in a haematology laboratory
Week 2	1	Equipment and chemicals used in a haematology laboratory
	2	Blood sampling techniques and specimen acceptability (Practical)
Week 3	1	Hematological disorders
	2	Blood collection and preservation methods.
Week 4	1	Preparation and staining of peripheral blood films.
	1	Hemoglobin estimation methods
Week 5	2	Complete Blood Cell Count: RBC, WBC, Platelet count, and indices.
	1	Anemia: Types, causes, and management.
Week 6	2	RBC and WBC Count (Practical)
	1	polycythemia: Types, causes, and management.
Week 7	2	Leukopenia and leukocytosis: Diagnosis and treatment
	1	Estimation of haemoglobin
Week 8	2	Preparation of blood Smear, Platelet smear, Clotting and bleeding time(practical)
	1	Estimation of haemoglobin (practical)
Week 9	2	Case studies (Practical)
	1	Thrombocytopenia Clinical significance and management
Week 10	1	Thrombocytosis: Clinical significance and management.
	2	Elevated ESR and its implications.

Handwritten signature

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Principal
S. S. E. S. Amravati's
Science College, Nagpur.

Approval letter: Artificial Intelligence (2022-23)

To,
The Principal
SSES Amt's Science College,
Congress Nagar, Nagpur-12

Subject: Permission to conduct the add on courses in the Computer Science department during the session 2022-2023

Respected Sir,

This is to request you that, we wish to conduct the add on courses in Computer Science department these are the certificate courses of thirty hours' time duration.

The details of the courses are submitted here with.

Hence please permit to run the same and oblige me.

Thanking you

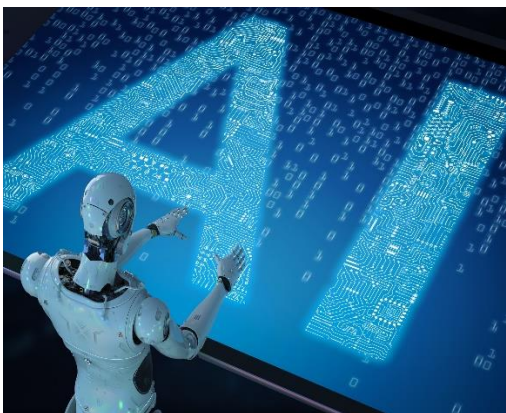
Yours sincerely

2/07/2022


Professor & Head
Department of Computer Science
SSES Amt's Science College
Congress Nagar, Nagpur-12

Permitted
A. Dhore

CERTIFICATE COURSE IN ARTIFICIAL INTELLIGENCE



Free Certificate Course for College Students

Duration – 30 Hours(10 Weeks)

Process of Registration- Early

Birds will be admitted

Course Objectives:

- 1) To Understand the Fundamentals of AI
- 2) Explore the Ethical and Societal Impacts of AI
- 3) Understand Advanced AI Topics
- 4) Apply AI Techniques to Real-World Problems:
- 5) Critically Evaluate AI Solutions



Department of Computer Science
SSES Amt 's Science College, Congress
Nagar, Nagpur

* AI encompasses various subfields, including machine learning, natural language processing, and computer vision. Machine learning, a core aspect, involves algorithms that enable computers to learn from and make decisions based on data. AI systems can perform tasks such as recognizing speech, understanding natural language, and playing strategic games. They are used in diverse applications like healthcare for diagnosing diseases, in finance for fraud detection, and in autonomous vehicles for navigation. Ethical considerations are critical in AI development, addressing issues like bias, privacy, and job displacement. Continuous advancements in AI technology promise significant benefits but also pose complex challenges that society must navigate responsibly.

Last Date of Registration: 24 December 2022
For Registration Contact: Dr. (Mrs) Shilpa R. Gedam (Coordinator)


Head of Department

Professor & Head
Department of Computer Science
S S E S Amr & Science College
Congress Nagar, Nagpur

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF COMPUTER SCIENCE

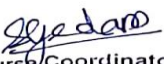
Date:19 -12-2022

Notice

All the students of B.Sc. are hereby informed that Department of Computer Science is conducting a skill based course titled Artificial Intelligence. This course aims to enhance your practical skills and knowledge in Artificial Intelligence. Register on or before 24 December 2022. Looking forward to your active participation.

Course Details:

- **Course Name:** Artificial Intelligence
- **Duration:** 6th January 2023 to 11th March 2023
- **Schedule:** 10 week
- **Eligibility:** Any Undergraduate


Course Coordinator
Dr. S. Gedam
Assistant Professor
Department of Computer Science
S.S.E.S. Amravati Science College,
Congress Nagar, Nagpur


Head of Department

Professor & Head
Department of Computer Science
S S E S Amr & Science College
Congress Nagar, Nagpur

SYLLABUS Covered

Certificate course (10 weeks)
(Artificial Intelligence)

Theory-

UNIT- I

Introduction to AI, Problem Solving and Search Algorithms
Knowledge Representation and Reasoning
Machine Learning Basics

UNIT – II

Neural Networks and Deep Learning
Natural Language Processing (NLP)
Computer Vision

UNIT – III

Reinforcement Learning
AI Ethics and Society
Practical AI Projects

Practicals-

1. Write a Program to implement Tic Tac Toe Game, Water Jug Problem.
2. Write a Program to implement Breadth first search algorithm, Depth-First Search (DFS) algorithm and Best first search algorithm.
3. Write a Program to implement A* Algorithm, AO* Algorithm and min - max algorithm.
4. Write a program to implement Alpha-Beta pruning and Hierarchical planning.
5. Write a program to demonstrate pattern recognition for recognizing email addresses within a block of text.
6. Write a Program to demonstrate text preprocessing and tokenization using regular expressions.
7. Write a Program to implement psychological modelling and Knowledge representation in AI.


Week-wise teaching plan:

Week	Hrs.	Syllabus
Week 1	1	Introduction to AI
	2	Problem Solving, Search Algorithms
Week 2	1	Knowledge Representation
	2	Knowledge Reasoning
Week 3	1	Machine Learning Basics
	2	Machine Learning Basics
Week 4	1	Neural Networks and
	1	Deep Learning
Week 5	1	Natural Language Processing (NLP)
	2	Language models and sequence labeling
Week 6	2	Computer Vision
	1	Image processing fundamentals
Week 7	2	Convolutional neural networks (CNNs) for vision tasks
	1	Applications in image classification, object detection, and face recognition
Week 8	2	Reinforcement Learning
	1	Markov decision processes (MDPs)
Week 9	2	AI Ethics and Society
	1	AI Ethics and Society
Week 10	1	Practical AI Projects
	2	Practical AI Projects

List of Students enrolled for Course- AI

Registration

Course - Even Semester

Date / /	 RANKA
Page	

1	Akanda Lokhande	AK
2	Akshita Mohdakar	Akshita
3	Amruta Gawande	Amruta
4	Anushka V. Mall	AM
5	Anushka Kuite	Kuite
6	Chetana M. Pardhi	Chetana
7	Chetna Sirde	Sirde
8	Deveshri Sahu	Deveshri
9	Lavanya Talnikar	Talnikar
10	Madhira Maske	Madhira
11	Minal Panpatte	Minal
12	Neha Gawande	Neha
13	Neha Khandate	Neha
14	Payal Bhargal	Payal
15	Prachi Thakare	Thakare
16	Pranjal Parate	Pranjal
17	Preteeksha Bhayde	Bhayde
18	Preera Patil	Patil
19	Priya Tiwari	Tiwari
20	Purnima Kodane	Purnima
21	Rajvi Mamulkar	Rajvi
22	Raksha Raut	Raksha
23	Raksha Sattale	Sattale
24	Rupali Dhudhankar	Dhudhankar
25	Rutuja Bhujade	Bhujade
26	Sakshi Waghe	Sakshi
27	Salmi Ganvir	Ganvir
28	Sanika Manwarde	Manwarde
29	Rahul Naase	Rahul
30	Sagar Bisen	Sagar
31	Hrishal Rangari	Rangari

82	Harshita Wasade	Wasade H
33	Harshu Makode	Harshu M
84	Himanshu Ramteke	H.R.
35	Isha Chaudhari	Isha C
36	Nidhi Bawande	Nidhi B
37	Nidhi Khabalkar	Nidhi K
38	Niharika Ambekar	Niharika A
39	Nishant Bhuse	Nishant B
40	Nupul Sontakke	Nupul S
41	Prathmesh Gungarankar	Prathmesh G
42	Pratishtha Dange	Pratishtha D
43	Priya Demath	Priya Demath
44	Priyanka Kharwar	Priyanka K
45	Priyansh Kozhe	Priyansh K
46	Sanchit Wakde	Sanchit W
47	Sanjana Ghatge	Sanjana G
49	Samyaa Upgade	Samyaa U
50	Saurabh Bhuse	Saurabh B
51	Saurabh Chafle	Saurabh C
52	Sejal Suruse	Sejal S
53	Jay Chandel	JChandel
54	Eksh Rang Bhendarkar	Eksh R
55	Mahendra Dawangar	Mahendra D
56	Mandas Sulakhe	Mandas S
57	Nikhil Nasare	Nikhil N
58	Pratik Charan	Pratik C
59	Vaidhi Vaidhi Tibhakate	Vaidhi T
60	Yash Yashree Pasai	Yashree P


Course Coordinator Report


Course Name: Artificial Intelligence

A free Add-On Course for UG students in the Department of Computer Science, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur was held from 6th January 2023 to 11th March 2023. The course title was "Artificial Intelligence". It is the complete beginner to Expert Course was perfect for anyone who wants to learn Artificial Intelligence. AI encompasses various subfields, including machine learning, natural language processing, and computer vision. Machine learning, a core aspect, involves algorithms that enable computers to learn from and make decisions based on data. AI systems can perform tasks such as recognizing speech, understanding natural language, and playing strategic games.

- In this course students learned different approaches to Artificial Intelligence, including the "good old" symbolic approach with **Knowledge Representation** and reasoning (**GOFAI**), **Neural Networks** and **Deep Learning**, which are at the core of modern AI and **Neural Architectures** for working with images and text.

The course duration was 10 weeks (30 hours). Two theory classes were engaged on Friday & Saturday and one Practical was engaged in every week. The structure of marking system was 60 marks on theory paper and 40 marks on practical execution. The question paper of theory examination was in MCQ type of 60 questions with four multiple choices. Practical examination was also taken on this course for 40 marks. Out of 60, 58 students appeared and passed in both theory and practical examination. The result was prepared and certificates were distributed to the students.


Course Coordinator
Dr. S. Gedam
Assistant Professor
Department of Computer Science
S.S.E.S. Amravati Science College,
Congress Nagar, Nagpur


Head of Department
Professor & Head
Department of Computer Science
S S E S Amravati Science College
Congress Nagar, Nagpur

Action Taken:

A free Add-On Course for UG students in the Department of Computer Science, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur was held from 6th January 2023 to 11th March 2023. The course title was "Artificial Intelligence". 58 students appeared and passed in both theory and practical examination. The result was prepared and certificates were distributed to the students.


Internal Quality Assurance Cell
(IQAC)
S. S. E. S. A. Science College
Congress Nagar, Nagpur.


Principal
S. S. E. S. Amravati's
Science College, Nagpur.

Approval letter: Artificial Intelligence (2022-23)

To,
The Principal
SSES Amt's Science College,
Congress Nagar, Nagpur-12

Subject: Permission to conduct the add on courses in the Computer Science department during the session 2022-2023

Respected Sir,

This is to request you that, we wish to conduct the add on courses in Computer Science department these are the certificate courses of thirty hours' time duration.

The details of the courses are submitted here with.

Hence please permit to run the same and oblige me.

Thanking you

Yours sincerely

2/07/2022


Professor & Head
Department of Computer Science
SSES Amt's Science College
Congress Nagar, Nagpur-12

Permitted
A. Dhore

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Free Certificate Course for College Students

Duration – 30 Hours(10 Weeks)

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Course Objectives:

- 1) To Understand the Fundamentals of AI
- 2) Explore the Ethical and Societal Impacts of AI
- 3) Understand Advanced AI Topics
- 4) Apply AI Techniques to Real-World Problems:
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Department of Computer Science
SSES Amt 's Science College, Congress
Nagar, Nagpur

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Last Date of Registration: 13 August 2022
For Registration Contact: Dr. (Mrs) Shilpa R. Gedam (Coordinator)


Head of Department

Professor & Head
Department of Computer Science
S S E S Amr & Science College
Congress Nagar, Nagpur

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF COMPUTER SCIENCE

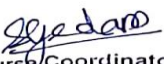
Date: 04-08-2022

Notice

All the students of B.Sc. are hereby informed that Department of Computer Science is conducting a skill based course titled Artificial Intelligence. This course aims to enhance your practical skills and knowledge in Artificial Intelligence. Register on or before 13 August 2022. Looking forward to your active participation.

Course Details:

- **Course Name:** Artificial Intelligence
- **Duration:** 16 August 2022 to 22 October 2022
- **Schedule:** 10 week
- **Eligibility:** Any Undergraduate


Course Coordinator
Dr. S. Gedam
Assistant Professor
Department of Computer Science
S.S.E.S. Amr & Science College,
Congress Nagar, Nagpur


Head of Department

Professor & Head
Department of Computer Science
S S E S Amr & Science College
Congress Nagar, Nagpur

SYLLABUS Covered
Certificate course (10 weeks)
(Artificial Intelligence)

Theory-

UNIT- I

Introduction to AI, Problem Solving and Search Algorithms
Knowledge Representation and Reasoning
Machine Learning Basics

UNIT – II

Neural Networks and Deep Learning
Natural Language Processing (NLP)
Computer Vision

UNIT – III

Reinforcement Learning
AI Ethics and Society
Practical AI Projects

Practicals-

1. Write a Program to implement Tic Tac Toe Game, Water Jug Problem.
2. Write a Program to implement Breadth first search algorithm, Depth-First Search (DFS) algorithm and Best first search algorithm.
3. Write a Program to implement A* Algorithm, AO* Algorithm and min - max algorithm.
4. Write a program to implement Alpha-Beta pruning and Hierarchical planning.
5. Write a program to demonstrate pattern recognition for recognizing email addresses within a block of text.
6. Write a Program to demonstrate text preprocessing and tokenization using regular expressions.
7. Write a Program to implement psychological modelling and Knowledge representation in AI.

Week-wise teaching plan:

Week	Hrs.	Syllabus
Week 1	1	Introduction to AI
	2	Problem Solving, Search Algorithms
Week 2	1	Knowledge Representation
	2	Knowledge Reasoning
Week 3	1	Machine Learning Basics
	2	Machine Learning Basics
Week 4	1	Neural Networks and
	1	Deep Learning
Week 5	1	Natural Language Processing (NLP)
	2	Language models and sequence labeling
Week 6	2	Computer Vision
	1	Image processing fundamentals
Week 7	2	Convolutional neural networks (CNNs) for vision tasks
	1	Applications in image classification, object detection, and face recognition
Week 8	2	Reinforcement Learning
	1	Markov decision processes (MDPs)
Week 9	2	AI Ethics and Society
	1	AI Ethics and Society
Week 10	1	Practical AI Projects
	2	Practical AI Projects

List of Students enrolled for Course- AI		
1	Anuja J Nagrikar	BSc-I
2	Khushi K Akre	BSc-I
3	Mugdha R Dakhole	BSc-I
4	Aparajita A Biswas	BSc-I
5	Falguni A Singalwar	BSc-I
6	Princy Gupta	BSc-I
7	Sanika Kashikar	BSc-I
8	Sanika Choudhari	BSc-I
9	Sanjana Lende	BSc-I
10	Abhisakti Ghugal	BSc-I
11	Ajinkya Ingle	BSc-I
12	Arpit Bangre	BSc-I
13	Harshit Mourya	BSc-I
14	Hitesh Fulmali	BSc-I
15	Htrushikesh Batwe	BSc-I
16	Mahendra Dwangan	BSc-I
17	Mandar Sulakhe	BSc-I
18	sarvesh Daware	BSc-I
19	Ujjwal Mnkar	BSc-I
20	Vinay Hulke	BSc-I
21	Vruddhi Niranjane	BSc-I

22	Ayesha A Siddique	BSc-II
23	Agilesh J Iyer	BSc-II
24	Akshata S Jadhav	BSc-II
25	Akshaya R Iyer	BSc-II
26	Anjali Jaiswal	BSc-II
27	Arya G Kadu	BSc-II
28	Astha Kadu	BSc-II
29	Bhushan P Mourya	BSc-II
30	Diyashri S Gajbhiye	BSc-II
31	Ekta V Sant	BSc-II
32	Geeanjali P Jatgade	BSc-II
33	Gouri A Doifode	BSc-II
34	Gunjan V Mourya	BSc-II
35	Ishika S Naik	BSc-II
36	Ishita S Shrivastava	BSc-II
37	Janhavi P Diwakar	BSc-II
38	Jayant J Haldar	BSc-II
39	Jyoti D Chavan	BSc-II
40	Kalyani M Nagapure	BSc-II
41	Kiran Rao	BSc-II
42	Madhura M Pathak	BSc-II
43	Nandini A Pasi	BSc-II
44	Osheen D Arora	BSc-II
45	Parmita S DeshBhratar	BSc-II
46	Parth S Virkhare	BSc-II
47	Pranali S Porchattiwari	BSc-II
48	Rajat B Tiwari	BSc-II
49	Riddhi C Kohad	BSc-II

50	Riya R Singh	BSc-II
51	Rohan K Nimje	BSc-II
52	Romit R Chaudhary	BSc-II
53	Shreya N Dhokwal	BSc-II
54	Sudhanshu Sakare	BSc-II
55	Sweth A Pimpalkar	BSc-II
56	Tanmay K Karanjekar	BSc-II
57	Tanmay P Nagrale	BSc-II
58	Tanuja K Shinde	BSc-II
59	Tanushka A Kadu	BSc-II
60	Vishaka M Khiani	BSc-II
61	DIPIKA SHRIPAD	BSc-III
62	RAVINA KAMBLE	BSc-III
63	MANSI HEDA OO	BSc-III
64	ISHIKA ZARBADE	BSc-III
65	KALYANI RAMTEKE	BSc-III
66	YASHPREET SINGH	BSc-III
67	PIYUSH MESHRAM	BSc-III
68	NEHA MAHORE	BSc-III
69	NIKITA MATE	BSc-III
70	PRAGATI SINGH	BSc-III
71	JAY CHIREKAR	BSc-III
72	PURVA LANDGE	BSc-III
73	ABHINAV GOTMARE	BSc-III
74	VIBHANSHA PATIL	BSc-III
75	AVINASH TAKOTE	BSc-III
76	SAKSHI RUNGHE	BSc-III
77	VAIBHAV KAKDE	BSc-III

78	SAYALI KHANKE	BSc-III
79	VINAY GAWANDE	BSc-III
80	SHRUTI HULKE	BSc-III
81	AKSHADA GIRHE	BSc-III
82	SONAM CHHAWARE	BSc-III
83	RINKU HATTEWAR	BSc-III
84	SAKSHI PURSWAMI	BSc-III
85	VIDNYANI UMATHE	BSc-III
86	DIVYANSHU CHOUKSEY	BSc-III
87	OM MANGLE	BSc-III

Internal Quality Assurance Cell
(IQAC)
S. S. E. S. A. Science College
Congress Nagar, Nagpur.

Head of Department

Professor & Head
Department of Computer Science
S S E S. Amt's Science College
Congress Nagar, Nagpur.


Course Coordinator Report


Course Name: Artificial Intelligence

A free Add-On Course for UG students in the Department of Computer Science, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur was held from 16th August 2022 to 22nd October 2022. The course title was "Artificial Intelligence". It is the complete beginner to Expert Course and was perfect for anyone who wants to learn Artificial Intelligence. AI encompasses various subfields, including machine learning, natural language processing, and computer vision.

In this course the students learned about Fundamentals of AI. They learned to Apply AI Techniques to Real-World Problems. Students were able to critically evaluate AI solutions.

The course duration was 10 weeks (30 hours). Two theory classes were engaged on Friday & Saturday and one Practical was engaged every week. The structure of marking system was 60 marks on theory paper and 40 marks on practical execution. The question paper of theory examination was in MCQ type of 60 questions with four multiple choices. Practical examination was also taken on this course for 40 marks. Out of 87, 85 students appeared and passed in both theory and practical examination. The result was prepared and certificates were distributed to the students.



Course/Coordinator
Dr. S. Gedam
Assistant Professor
Department of Computer Science
S.S.E.S. Amravati's Science College,
Congress Nagar, Nagpur


Head of Department
Professor & Head
Department of Computer Science
S S E S' Amravati's Science College
Congress Nagar, Nagpur

Action Taken:

A free Add-On Course for UG students in the Department of Computer Science, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur was held from 16th August 2022 to 22nd October 2022. The course title was "Artificial Intelligence". 85 students appeared and passed in both theory and practical examination. The result was prepared and certificates were distributed to the students.


Internal Quality Assurance Cell
(IQAC)
S. S. E. S. A. Science College
Congress Nagar, Nagpur.


Principal
S. S. E. S. Amravati's
Science College, Nagpur.

From:

Dr. S. W. Anwane
Department of Physics
SCIENCE COLLEGE
Congress Nagar, NAGPUR

To,

The Principal
SSES Amt's Science College,
Congress Nagar, Nagpur-12

Subject: Permission Letter for starting MOOCs course in Physics “Boot Camp to Special Theory of Relativity” during the session 2023-24

Respected Sir,

I the undersigned, Dr. S. W. Anwane, Professor and Head, Department of Physics have prepared the syllabus and module of 8 hours Online Certificate course on “Boot Camp to Special Theory of Relativity” on UdeMY platform. As the course of RTM Nagpur University for B Sc Sem VI Physics Paper-I (UNIT-I) and UDEMY course was same, I can offer free coupons to the students.

For this, kindly permit me to donate free Coupons and run this online MOOCs course for our students.

Looking forward to you for your kind permission.

Thanking You

Yours Sincerely



Dr. S. W. Anwane
Professor and Head
Department of Physics
Shri Shivaji Education Society Amravati's
SCIENCE COLLEGE
Congress Nagar, Nagpur.



Prof. M. P. Dhore
Principal
Science College,
Congress Nagar, Nagpur

**Shri Shivaji Education Society Amravati's Science College,
Congress Nagar Nagpur**

Department of Physics

CIRCULAR

Date: 06/02/2023

All the students of B.Sc. Sem VI of the department of Physics are hereby informed that, the FREE Coupons of the online course "Boot Camp to Special theory of Relativity" available are as following. You are advised to catch this opportunity to add the advancement in your knowledge and enroll for this course during due date. A due weightage of internal marks will be provided to you on submission of certificates to the undersigned.

FREE COUPON CODEs

**5E7F65BA4424445D6693
E2DB439BE72946D3DB03**

Course Coordinator



Dr. S. W. Anwane
Professor and Head
Department of Physics
Shri Shivaji Education Society Amravati's
SCIENCE COLLEGE
Congress Nagar, Nagpur.

Broucher



SCIENCE COLLEGE

Congress Nagar, Nagpur- 12 (MS)

Reassessed with A+ Grade with CGPA 3.51 by NAAC, Bangalore
College with Potential for Excellence identified by UGC New Delhi
Institutional Member of APQN
Recognized Centre for Higher Learning and Research
Mentor College under Paramarsh Scheme
An ISO 21001:2018 Certified Institution
NIRF ranking (HRD Ministry) 201-300



A BOOT CAMP TO SPECIAL THEORY OF RELATIVITY

PROF. S. W. ANWANE

What you'll learn?

- Understanding the Famous $E = mc^2$ relation
- Clock Paradox and Twin paradox
- Relativistic Lagrangian
- Understanding of space-time continuum in reference to Einstein's Relativity
- Meaning of Simultaneity in relativity, Causality Principle
- Relativistic Doppler effect
- Sketching space-time diagram for space contraction, time dilation, understanding simultaneity, relativistic Doppler effect etc



This course includes:

- 8 hours on-demand video
- Assignments
- Access on mobile and TV
- Full lifetime access
- Certificate of completion

Register Now

<https://www.udemy.com>

Following Students were enrolled for the course

Sr No	Special Relativity
1	Aayesha Ashfaque Siddique
2	Agilesh Iyar
3	Akansha Subhash Sangole
4	Amisha
5	Amisha bilkar
6	Anjali lodhikar
7	Arti Subhash Joshi
8	Atharwa wankhade
9	Chaitrali Ganeshrao Shende
10	Devendra jaipurkar
11	Dhanshree Choudhari
12	Diksha Ravindra Gedam
13	Dikshant Wasnik
14	Disha Vijay Raut
15	Divyashri Surendra Gajbhiye
16	Gargi Jaunjal
17	Gaurav shekhar kumare
18	Gauri Doifode
19	Gauri patle
20	Gauri zade
21	Gayatri Vinod Kawale
22	Geetanjali Prakash Jatgade
23	Isha D. Chaudhari
24	Janhvi Kayarkar
25	Janvi kene
26	Jay madhukar shende
27	Jay Shende
28	Jayshree prakash yadav
29	Jyoti chauhan
30	Kalyani Motilal Nagapure
31	Kaveri Rambhau Bodele
32	Khushi kanoje
33	Khushi Rahul Aglawe
34	Krunal Gajanan Bhagat
35	Lokesh shriniwas Patel
36	Madhura Pathak
37	MAHEK Pramod Mishra
38	Manasvi dange
39	Manya Ganesh Pimple
40	Mohini Bhaskar Bhute
41	Mohit Bhakte Munesh RavindraSingh
42	Chaudhary
43	Muskan khapre
44	Muskan pathak
45	Nidhi Shailesh Bawangade

- 46 Nikhil Milind Bansod
- 47 Nikhita Ravikant Meshram
- 48 Nishant Dushyant Meshram
- 49 Osheen Darshan Arora
- 50 Palak Paroche
- 51 Pari Gajanan Balapure
- 52 Pranali Porchattiwari
- 53 Pranav Bhupesh lakhe
- 54 Pranjal Vijay Agarkar
- 55 Pratham shrivas
- 56 Riddhi chandrashekhar Kohad
- 57 Ritika Balodiya
- 58 Rohan Mahajan
- 59 Romit Chaudhury
- 60 Ruchi Meena
- 61 Sakshi Mangesh Raut
- 62 Sakshi Pramod Dhakate
- 63 Samiksha Radke
- 64 Sanchit Joshi
- 65 Sanjana Jangade
- 66 Sanskruti Rajendra M
- 67 Sapna Yadav
- 68 Sarang Wagh
- 69 Shraddha Baban Bagde
- 70 Shreyash Lakde
- 71 Shrinay Bhiwgade
- 72 Shubham Sathawane
- 73 Shweta Sunil Charpe
- 74 Sneha sharma
- 75 Srushti karki
- 76 Student Name
- 77 Stuti Karotiya
- 78 Swati Fattu Dhabekar
- 79 Sweta Sandeep Naidu
- 80 Sweth Pimpalkar
- 81 Tanmay Komal Karanjekar
- 82 Tanmay Pramod Nagrale
- 83 Vaishnavi Dhadse
- 84 Vaishnavi Dinesh Dabare
- 85 Varun motwani
- 86 Vedanti Doble
- 87 Vikrant Sirsat
- 88 Vinku Moundekar
- 89 Yashwant Raju Paunekar

Action Taken Report

Boot Camp to Special theory of Relativity-UDEMY MOOCS Course

In response to the appeal made by the teachers and the Principal of the college, the large no. of students (89) completed the course on “**Boot Camp to Special theory of Relativity**”.

Following Coupons were utilized by the students.

5E7F65BA4424445D6693	\$0.00	02/06/2024	03/08/2024	82 / 100
E2DB439BE72946D3DB03	\$0.00	03/16/2023	04/16/2023	55 / 100

“Boot Camp to Special theory of Relativity”
Syllabus of MOOCS UDEMY COURSE

Unit I : Introduction

1. Introduction
2. Newton’s approach from Principia Mathematica
3. Newtonian Relativity & Gallilean Transformation
4. Ether Hypothesis
5. Michelson-Morley Hypothesis

Unit II : Einstein’s Special Theory of Relativity

1. Einstein’s Postulates
2. Derivation of Lorentz Transformation
3. Alternate Derivation of Lorentz Transformation
4. Inverse Lorentz Transformation
5. How this Gamma behaves

Unit III : Effect of Lorentz Transformations

1. Physical meaning of moving bodies & moving clocks
2. Experimental proof of time dilation
3. Simultaneity is relative
4. Space time diagrams under Lorentz Transformation (Part II)
5. Space time diagrams (Part III) of physical bodies in motion
6. Space time diagrams (Part IV) Simultaneity in frames S & S’
7. Area of space time cell
8. Time dilation in space time diagrams
9. The principle of causality

Unit IV : Kinematics in Mechanics of Einstein’s Special Theory of Relativity

1. Composition of velocity in the STR
2. The clock paradox & the twin paradox
3. Meaning of mass in STR
4. The relativistic Doppler’s Effect
5. The energy mass equivalence
6. Energy using the Lagrangian
7. Concluding Remark

SYLLABUS OF RTM NAGPUR UNIVERSITY

Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Faculty of Science

Credit based Proposed Syllabus

PHYSICS

[Three Year (Six Semesters) Degree Course]

B. Sc. Final Year (Semester VI)

Course-PHYSICS - Paper-I (601)

(Relativity, Nuclear Physics and Bio Physics)

Marks- 50

Time- 30 hours

Unit I:

Relativity- Frame of reference, Inertial and non inertial frames, Galilean transformation equations, Galilean invariance, Michelson-Morley experiment, Postulates of the special theory of relativity, Lorentz transformations, Length contraction, Time dilation, Velocity addition theorem, Variation of mass with velocity, Mass energy equivalence.



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY
Established by Government of Central Provinces Education Department by Notification No. 513 dated the 1st of August, 1923 & presently a State University governed by Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017)

DEPARTMENT OF LIFELONG LEARNING AND EXTENSION

Gururanak Bhavan, University Campus, Amravati Road, Nagpur - 440 033. Phone : 2530860
E-mail : doll.rtmnu@gmail.com

To,
The Principal
Shivaji Science College,
Nagpur,

No.DOLLE236/19

Dated : 16.10.2019

9423103043
Subject : **Sanction for Conducting Short Term Courses under
Jeevan Shikshan Abhiyan on No Grant Basis.**

Sir/Madam,

With reference to your proposal for conducting Short Term courses indicated below under Jeevan Shikshan Abhiyan of this Department, I am to inform you that your proposal has been accepted by the Department and your College has been granted permission to conduct the course on the following conditions:

Details of the Course

Sr. No.	Name of the Course	Duration	No. of Candidates to be admitted	Fees to be Charged per Student	Fees to be Deposited With the Deptt.
1	Certificate Course in Groundwater Exploration	8 Weeks	20	1200/-	10%
2	Certificate Course in Statistical Quality Control	6 Weeks	20	650/-	10%
3	Certificate Course in Immune-Diagnostics	4 Weeks	20	2200/-	10%
4	Certificate Course in Environmental and Water Management	6 Weeks	20	1000/-	10%
5	Certificate Course in Mushroom Cultivation	6 Weeks	20	1000/-	10%
6	Certificate Course in Biofertilisers and Biopesticides	12 Weeks	20	1500/-	10%
7	Certificate Course in Forestry and Wild Life Management	6 Weeks	20	1500/-	10%

Rules & Regulations of this Department regarding these courses should be strictly followed.

1. **This sanction is valid for this particular Batch only.**
2. Fees for the course should be charged as per the norms prescribed.
3. Expenditure on the course should be incurred as per norms.
4. Course should be started within a Month from **the date of sanction.**
Please communicate your acceptance within **a month and submit Initial Report Along with list of students admitted.**

Dr. A.D. Bobdey
for n.a -
MBH
03-01-2020

Your's faithfully,

prateek
Director

S.S.E.S. Amt's Science College, Congress Nagar, Nagpur.

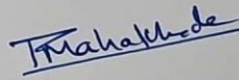
Department of Botany
SKILL BASE PROGRAMME (2019-2020)
Certificate Course: Mushroom Cultivation

Notice

Date: 04/01/2020

The Department of Botany is conducting **Certificate Course in Mushroom Cultivation** (Skill Based Course) under Department of Life Long Learning and Extension, RTMNU, Nagpur for the session 2019-20. Interesting students of B.Sc. Part I & Part II should registered themself in early and contact to the Course Coordinator Dr. R. H. Mahakhode immediately. Last Date for admission is 30 January 2020.

Course	Admission Fees
Mushroom Cultivation	Rs. 1000/-


Dr. R.H. Mahakhode
Course Coordinator
Dr. ~~Deppal B. Mahakhode~~ Mahakhode
Assistant Professor
Department of Botany
SSES Amt's Science College
Congress Nagar, Nagpur-440012.



Shri Shivaji Education Society Amravati's

SCIENCE COLLEGE

Congress Nagar, Nagpur - 440012 (M.S.) India.
Accredited With CGPA Of 3.51 At 'A+' Grade.



Department of Botany

Organizes

SKILL-BASED MUSHROOM CULTIVATION CERTIFICATE COURSE

2019-2020

ABOUT COURSE

- Extensive training in mushroom cultivation techniques.
- Practical, hands-on experience with real-world applications.
- Expert guidance from industry experts.
- In-depth exploration of substrate preparation, inoculation, and harvesting.
- Skills development through project presentations and assessments.



For Registration Contact

Dr. Rupali H. Mahakhode

**Shivaji Education Society Amravati's
SCIENCE COLLEGE, Congress Nagar, Nagpur
Department of Botany
Organized
Skill- Based Mushroom Cultivation Certificate Course
Session 2019-20**

REPORT

Department of Botany, Shivaji Science College organized one day workshop on “Edible Mushroom Cultivation” on 20th Feb. 2020 in the conference hall. Twenty students were registered for this certificate course in the session 2019-20. Mr. Abhimanyu Rao Dongarwar, Expert, Sky Mushrooms, Nagpur inaugurated the workshop and Principal Dr. M. P. Dhore was present as a president of the function.

Mr. Abhimanyu Rao Dongarwar emphasized on entrepreneurship skill development regarding training in the mushroom technique. Principal Dr. M. P. Dhore, guided the students about their overall development by learning several skills in hand on training in mushroom cultivation and applauded the efforts taken by the Dept. of Botany. Dr. R. N. Deshmukh, HOD. Department of Botany guided the students about several benefits of mushroom in their daily life and also given some life learning tips on this occasion.

Dr. Mrs. S. D. Puranik, Convener of the workshop briefed about the lifelong activities and achievements of students benefitted by the workshop and several income opportunities. Dr. Mrs. R. H. Mahakhode Course Coordinator guided the students to inculcate the skill among them. Dr. Mrs. P.S. Tiwari, Mr. Piyush Sharma and Mr. Manish Chinchmalatpure were also present on the dais. Miss. Tanushree Banerjee conducted the proceedings and proposed the vote of thanks.





Dr. M.P. Dhore, Principal addressing to the students about overall development through skill-based learning programs



Dr. R. N. Deshmukh guided the students about the benefits of Mushrooms



One Day Workshop on Edible Mushroom Cultivation

One Day Workshop on Edible Mushroom Cultivation



Dr. R.H. Mahakhode

Dr. R.H. Mahakhode
Course Coordinator

ACTION TAKEN REPORT

The Department of Botany wad conducted Certificate course in Mushroom Cultivation (Skill Based Course) under the Department of Life Long Learning and Extension, RTMU, Nagpur. Twenty students were registered for this certificate course in session 2019-20.

On February 20, 2020, the Department of Botany, Shivaji Science College, Congress Nagar, Nagpur hosted a one-day workshop on “Edible Mushroom Cultivation” in the conference hall. The workshop, inaugurated by Mr. Abhimanyu Rao Dongarwar of Sky Mushrooms and presided over by Principal Dr. M.P. Dhore, focused on developing entrepreneurship skills through mushroom cultivation. Dr. R.N. Deshmukh discussed the benefits of mushrooms and provided practical tips, while Dr. Mrs. S.D. Puranik highlighted the workshop’s impact on students’ skills and income opportunities. Dr. Mrs. R.H. Mahakhode emphasized skill development, and the event was supported by Dr. Mrs. P.S. Tiwari, Mr. Piyush Sharma, and Mr. Manish Chinchmalatpure, with proceedings conducted by Miss. Tanushree Banerjee.

R.H. Mahakhode

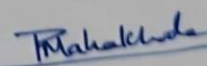
Dr. R.H. Mahakhode
Course Coordinator
Dept. of Botany

S.S.E.S. AMRAVATI'S SCIENCE COLLEGE CONGRESS NAGAR, NAGPUR

Department of Botany

Certificate Course in Mushroom Cultivation Syllabus

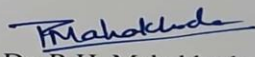
Course components	Learning hours and mode of delivery
Unit-I: Introduction to mushrooms I. Scope, importance and history II. Classification of Mushroom III. Identification of Edible & Poisonous Mushrooms IV. Economic Importance of Mushroom	3 Weeks 07 THEORY
Unit-II: Infrastructure I. Designing & construction of Mushroom farms II. Tools & Machinery III. Sterilization and inoculation technique IV. Mushroom compost	2 Weeks 03 THEORY
Unit-III: Cultivation technique I. Climate requirement II. Bed/Bag preparation III. Types of straw in Mushroom Cultivation IV. Harvesting and post harvesting care	2 Weeks 04 THEORY
Unit-IV: Crop management & Health benefits I. Crop management II. Role of fungicide and bactericide III. Nutritional & Medicinal value of Mushroom IV. Mushroom care & handling	3 Weeks 06 THEORY
List of Practical: I. To study the identification of different types of Mushrooms II. To study the Tools used in mushroom cultivation III. To study the designing of mushroom unit IV. To study Sterilization technique V. To study inoculation technique VI. Preparation of different types of compost VII. Pasteurization of compost VIII. Methods of selection of different straws IX. To demonstrate Bed preparation X. To demonstrate Bag preparation XI. Selection of correct spawn XII. To study the different types of fungicide XIII. To study the different types of bactericide XIV. Mushroom care & handling XV. Field visit & project submission XVI. Workshop on Mushroom Cultivation	20 PRACTICAL


 (Dr. Rajan H. Mahakudde)
 Assistant Professor
 Department of Botany
 SSES Amt's Science College
 Congress Nagar, Nagpur-440012.

Teaching Plan
Certificate Course (10 Weeks)
Mushroom Cultivation


Weeks	Theory/Practical	Class/ Hours	Contents
Week I	Theory 1	60 min.	Introduction & History of Mushroom
	Theory 2	60 min.	Scope & Importance of Mushroom
	Practical	60 min.	Introduction to different Mushrooms
	Practical	60 min.	Morphology of Mushroom
Week II	Theory 3	60 min.	Classification of Mushroom
	Theory 4	60 min.	Identification of Edible Mushroom
	Practical	60 min.	To study the identification of Edible Mushroom
	Practical	60 min.	To study the identification of Poisonous Mushroom
Week III	Theory 5	60 min.	Identification of Poisonous Mushroom
	Theory 6	60 min.	Characters of Edible & Poisonous Mushroom
	Practical	60 min.	To study the tools used in mushroom cultivation
	Practical	60 min.	To study the designing of mushroom unit
Week IV	Theory 7	60 min.	Economic importance of Mushroom
	Theory 8	60 min.	Designing & construction of Mushroom farms
	Practical	60 min.	To study sterilization technique
	Practical	60 min.	To study inoculation technique
Week V	Theory 9	60 min.	Different tools & machinery used in mushroom cultivation
	Theory 10	60 min.	Sterilization & Inoculation technique
	Practical	60 min.	Preparation of different types of compost
	Practical	60 min.	Pasteurization of compost
Week VI	Theory 11	60 min.	Climate requirement
	Theory 12	60 min.	Bed preparation
	Practical	60 min.	Selection of correct spawn
	Practical	60 min.	Methods of selection of different straws

Week VII	Theory 13	60 min.	Bag preparation
	Theory 14	60 min.	Harvesting & Post harvesting care
	Practical	60 min.	To demonstrate Bed preparation
	Practical	60 min.	To demonstrate Bag preparation
Week VIII	Theory 15	60 min.	Crop management
	Theory 16	60 min.	Role of fungicide
	Practical	60 min.	To study the different types of fungicide
	Practical	60 min.	To study the different types of bactericide
Week IX	Theory 17	60 min.	Role of bactericide
	Theory 18	60 min.	Nutritional value of mushroom
	Practical	60 min.	Mushroom care & handling
	Practical	60 min.	Field visit
Week X	Theory 19	60 min.	Medicinal value of mushroom
	Theory 20	60 min.	Project writing
	Practical	60 min.	Spotting on different types of Mushroom
	Practical	60 min.	Workshop on Mushroom Cultivation


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